REMARKS

As a preliminary matter, the specification is objected to for the reasons set forth on page 2 of the present Office Action. Applicant amends the specification, as indicated herein, and believes that these amendments obviate the Examiner's objections to the specification.

Also, as a preliminary matter, the drawings are objected to for the reasons set forth in numbered Paragraphs 5 and 6 on pages 2-4 of the present Office Action. Applicant amends the figures, as indicated in the attached hand-corrected figures, and believes that these changes would the Examiner's objections.

Claims 1-19 are all the claims pending in the application. Claims 12, 16, 17, and 19 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Claims 1-5 and 10-19 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hayashi et al. (U.S. Patent No.: 5,253,082) in view of Aoki et al. (U.S. Patent No.: 6,111,664), in view of Gondek (U.S. Patent No.: 5,982,990). Claims 5 and 7-9 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hayashi in view of Aoki in view of Takahashi (U.S. Patent No.: 6,697,167). Finally, claim 6 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hayashi in view of Aoki in view of Gondek, and further in view of Matsunawa et al. (U.S. Patent No.: 5,357,354).

§ 112, Second Paragraph, Rejections - Claims 12, 16, 17, and 19

Claims 12, 16, 17 and 19 are rejected under 35 U.S.C. § 112, second paragraph, for the reasons set forth on page 5 of the present Office Action.

In response to the Examiner's allegation in numbered paragraph 10, Applicant submits

that Fig. 2 illustrates the claimed continuous relationship between the input tone data S64 for the

first color space and the tone data (see index table 22) for the second color space.

With respect to numbered paragraphs 11-14, Applicant amends claims 16, 17, and 19,

and believes that these amendments obviate the Examiner's rejections of claims 16, 17, and 19

under 35 U.S.C.§ 112, second paragraph.[1]

§ 103(a) Rejections (Hayashi / Gondek / Aoki) - Claims 1-5 and 10-19

Claims 1-5 and 10-19 are rejected under 35 U.S.C.§ 103(a) for the reasons set forth on

pages 6-13 of the present Office Action.

With respect to independent claim 1, the Examiner alleges that Hayashi teaches some of

the limitations set forth in claim 1, but the Examiner acknowledges that Hayashi does not teach

or suggest every aspect set forth in claim 1. The Examiner, however, alleges that Gondek and

Aoki make up for Hayashi's deficiencies. Specifically, with respect to Aoki, the Examiner

alleges:

> Aoki et al disclose an apparatus wherein a gamma characteristic A,
> for said input tone data for said first color space, for an output
> density relative to a tone value for each brightness level of an
> image corresponds to a gamma characteristic B, for said halftone
> table, for an output density relative to a tone value for each
> brightness level of an image (Aoki et al discloses an apparatus for
> the method of correcting the density (Figure 1, reference 3)
> characteristic (Figure 6, reference 72, 73; column 7, lines 44-49),
> wherein the 73 is the target curve and 72 is the actual characteristic
> of the printing engine (Figure 1, reference 32). By forcing the
> target curve to be similar to the input gamma characteristic, the
> density characteristic of the halftoning section can match that of

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[1] Also, claims 1-3, 6, 7, 13, 18, and 19 are amended, as indicated herein, for clarification purposes.

the input gamma characteristic through the method discussed
(column 7, lines 44-49). Thus, the density levels can match for
different levels of input for the two characteristics.)

In response, Applicant submits that the applied references, either alone or in combination,

do not teach or suggest, "wherein a gamma characteristic A, for said input tone data for said first

color space and an <u>output density relative to a tone value for each brightness level of an image</u>,

corresponds to a gamma characteristic B for said halftone table and an output density relative to

a tone value for each brightness level of an image," as recited in claim 1. That is, as indicated in

the underlined portion of the feature above, the gamma characteristics described in claim 1 are,

in part, for an output density relative to a tone value each brightness level of an image, however,

the cited portions of Aoki and the cited figures do not even mention that a gamma characteristic

for an output density would be relative to a tone value for each brightness level. There is no

brightness level or corresponding tone value mentioned in Aoki. Further, Figure 6 which is used

to support the rejection of claim 1, only shows the relationship between input <u>density</u> level and

measured <u>density</u>, however there is no such mention of computing an output density relative to a

tone value for each brightness level of an image. Therefore, at least based on the foregoing,

Applicant submits that independent claim 1 is patentably distinguishable over the applied

references.

Further, with respect to independent claims 1, 13, and 19, Applicant submits that the

applied references, either alone or in combination, do not teach or suggest at least, "wherein a

gamma characteristic A, for said input tone data for said first color space and an output density

relative to a tone value for each brightness level of an image, corresponds to a gamma

characteristic B for said halftone table and an output density relative to a tone value for each

brightness level of an image," "wherein, for a gamma characteristic A for an output density

relative to a tone value of said input tone data for said RGB color space, a difference between a

ratio for a first RGB tone area of the change of said output density to the change of a first input

tone value, and a ratio for a second RGB tone area of the change of said output density to the

change of second input tone value, which is lower than said first input tone value for said first

input tone area, is the same as a difference, for said gamma characteristic B of said halftone

table, between a ratio for a first CMYK input tone area of the change of said output density to the

change of a third input tone value, and a ratio for a second CMYK input tone area of the change

of said output density to the change of a fourth input tone value, which is higher than said third

input tone value for said first CMYK input tone area," and "wherein, for a gamma characteristic

A for an output density relative to a tone value of said input tone data for said RGB color space,

a difference between a ratio for a first RGB tone area of the change of said output density to the

change of a first input tone value, and a ratio for a second RGB tone area of the change of said

output density to the change of a second input tone value, which is lower than said first input

tone value for said first input tone area, is the same as a difference, for a gamma characteristic B

of said halftone table, between a ratio for a first CMYK input tone area of the change of said

output density to the change of a third input tone value, and a ratio for a second CMYK input

tone area of the change of said output density to the change of a fourth input tone value, which is

higher than said third input tone value for said first CMYK input tone area," as recited in

independent claims 1, 13, and 19, respectively. That is, Hayashi corresponds to the related art

which employs linear conversion characteristic in the halftone processing discussed in the

specification. Look up table (LUT) 1 of Fig. 7 of Hayashi is a table for correcting (maintaining) a linear relationship between CMY data as an input of a printer and an ink (toner) density when a halftoning circuit processes the data (i.e., between the input and output in the same color space). *See column 11, line 51 to column 12, line 13 of Hayashi.* Furthermore, Aoki discloses that, in a case where the obtained density characteristic 72 is far removed from a target characteristic 73, the halftone processor 20 calculates correction data by referring to a gamma table stored in a gamma ROM 24 and stores the correction data in the gamma correction RAM 52. Similar to Hayashi, the halftoning is for compensating the characteristic of an engine in the same color space of a printer.

On the other hand, the present invention, as recited in claims 1, 13, and 19, can result in the matching of the characteristic of output density for a printer, for example, with an input characteristic in a color space of an output such as a display, prior to any color conversion. At least based on the foregoing, Applicant submits that the applied references, either alone or in combination, do not teach or suggest the quoted limitations of claims 1, 13, and 19, as set forth above.

Applicant submits that dependent claims 2-5, 10-12 and 14-17 are patentable at least by virtue of their indirect or direct dependency from independent claim 1.

Further, with respect to dependent claim 10, Applicant amends this claim, as indicated herein, for clarification purposes, and submits that the features of claim 10 are not taught by Aoki. That is, contrary to the Examiner, Applicant submits that the target curve 73 and actual density characteristic curve 72 do not relate to the gamma characteristic of L*, as L* corresponds

to the data representing brightness. The graph shown in Figure 6 of Aoki does not relate to the

gamma characteristics of data representing brightness.

§ 103(a) Rejections (Hayashi/Aoki/Takahashi) - Claims 5, 7, 8, and 9

Claims 5, 7, 8, and 9 are rejected for the reasons set forth on pages 14-16 of the present

Office Action.

Applicant submits that dependent claims 5, 7, 8 and 9 are patentable at least by virtue of

their dependency from independent claim 1. Takahashi does not make up for deficiencies of

Hayashi and Aoki.

§ 103(a) Rejections (Hayashi/Aoki/Matsunawa) - Claim 6

Claim 6 is rejected for the reasons set forth on pages 17-18 of the present Office Action.

Applicant submits that claim 6 is patentable at least by virtue of its dependency from

independent claim 1. Matsunawa does not make up for the deficiencies of the other applied
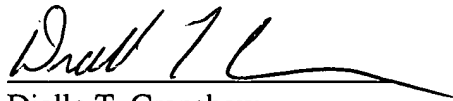
references.

In view of the above, reconsideration and allowance of this application are now believed

to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

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Date: December 27, 2004

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AMENDMENTS TO THE DRAWINGS

Submitted herewith please find 5 sheets annotated drawings in compliance with

37 C.F.R. § 1.84. The Examiner is respectfully requested to acknowledge receipt of these

drawings.

Attachment: Annotated Sheets: Figures 1, 2, 5, 6 and 8